Search Results -

Terms	Documents
liver and l4	16

Database: US Patents Full-Text Database; US Pre-Grant Publication Full-Text Database; JPO Abstracts Database; EPO Abstracts Database; Derwent World Patents Index; IBM Technical Disclosure Bulletins

Refine Search: liver and l4 Clear

Search History

Today's Date: 9/19/2001

DB Name	Query	Hit Count	Set Name
USPT,PGPB	liver and l4	16	L8
USPT,PGPB	capsid and l4	12	L7
USPT,PGPB	l2 and l5	5	L6
USPT,PGPB	adenovirus near3 (3 or 7 or 16 or 11 or 14 or 21 or 51 or 34 or 35)	453	L5
USPT,PGPB	l2 and l3	22	L4
USPT,PGPB	adenovirs or virus	44043	L3
USPT,PGPB	tropism and (smooth adj muscle adj cell or smc)	23	L2
USPT,PGPB	tropism with (smooth adj muscle adj cell or smc)	1	L1

WEST

Generate Collection

Search Results - Record(s) 1 through 5 of 5 returned.

☐ 1. Document ID: US 6265212 B1

L6: Entry 1 of 5 File: USPT Jul 24, 2001

US-PAT-NO: 6265212
DOCUMENT-IDENTIFIER: US 6265212 B1

TITLE: Packaging systems for human recombinant adenovirus to be used in gene therapy

DATE-ISSUED: July 24, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fallaux; Frits J.	Leiderdorp	N/A	N/A	NLX
Hoeben; Robert C.	Leiden	N/A	N/A	NLX
Bout; Abraham	Moerkapelle	N/A	N/A	NLX
Valerio; Domenico	Leiden	N/A	N/A	NLX
van der Eb; Alex J.	Oegstgeest	N/A	N/A	NLX
Schouten; Govert	Leiden	N/A	N/A	NLX

US-CL-CURRENT: 435/320.1; 424/93.21, 435/235.1, 435/325, 435/69.1, 536/23.1

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

☐ 2. Document ID: US 6117680 A

L6: Entry 2 of 5 File: USPT Sep 12, 2000

US-PAT-NO: 6117680
DOCUMENT-IDENTIFIER: US 6117680 A

TITLE: Compositions and methods for regulation of transcription

DATE-ISSUED: September 12, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Natesan; Sridaran	Chestnut Hill	MA	N/A	N/A
Gilman; Michael Z.	Newton	MA	N/A	N/A

US-CL-CURRENT: 435/455; 435/235.1, 435/320.1, 435/325, 435/456, 536/23.4

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

☐ 3. Document ID: US 5962311 A

L6: Entry 3 of 5 File: USPT Oct 5, 1999

DOCUMENT-IDENTIFIER: US 5962311 A

TITLE: Short-shafted adenoviral fiber and its use

DATE-ISSUED: October 5, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wickham; Thomas J.	Potomac	MD	N/A	N/A
Roelvink; Petrus W.	Olney	MD	N/A	N/A
Kovesdi; Imre	Rockville	MD	N/A	N/A

US-CL-CURRENT: 435/320.1; 435/235.1, 435/69.7

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

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☐ 4. Document ID: US 5846782 A

L6: Entry 4 of 5 File: USPT Dec 8, 1998

US-PAT-NO: 5846782
DOCUMENT-IDENTIFIER: US 5846782 A

TITLE: Targeting adenovirus with use of constrained peptide motifs

DATE-ISSUED: December 8, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wickham; Thomas J.	Potomac	MD	N/A	N/A
Roelvink; Petrus W.	Olney	MD	N/A	N/A
Kovesdi; Imre	Rockville	MD	N/A	N/A

US-CL-CURRENT: 435/69.7; 530/350

Full | Title | Citation | Front | Review | Classification | Date | Reference KWIC | Draw Desc | Image

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☐ 5. Document ID: US 5712136 A

L6: Entry 5 of 5 File: USPT Jan 27, 1998

US-PAT-NO: 5712136
DOCUMENT-IDENTIFIER: US 5712136 A

TITLE: Adenoviral-mediated cell targeting commanded by the adenovirus penton base protein

DATE-ISSUED: January 27, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wickham; Thomas J.	Potomac	MD	N/A	N/A
Kovesdi; Imre	Rockville	MD	N/A	N/A
Roelvink; Petrus W.	Gaithersburg	MD	N/A	N/A
Brough; Douglas E.	Otney	MD	N/A	N/A
McVey; Duncan L.	Derwood	MD	N/A	N/A
Bruder; Joseph T.	Frederick	MD	N/A	N/A

US-CL-CURRENT: 435/456; 435/235.1, 435/320.1, 530/350

Generate Collection

Terms	Documents
l2 and l5	5

Display 20 Documents, starting with Document: 5

Display Format: Change Format

WEST

Generate Collection

Search Results - Record(s) 1 through 12 of 12 returned.

☑ 1. Document ID: US 6287857 B1

L7: Entry 1 of 12 File: USPT Sep 11, 2001

US-PAT-NO: 6287857
DOCUMENT-IDENTIFIER: US 6287857 B1

TITLE: Nucleic acid delivery vehicles

DATE-ISSUED: September 11, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
O'Riordan; Catherine R.	Boston	MA	N/A	N/A
Wadsworth; Samuel C.	Shrewsbury	MA	N/A	N/A

US-CL-CURRENT: 435/320.1; 536/23.1, 536/24.2

Full | Title | Citation | Front | Review | Classification | Date | Reference KWIC | Draw Desc | Image

☐ 2. Document ID: US 6265212 B1

L7: Entry 2 of 12 File: USPT Jul 24, 2001

US-PAT-NO: 6265212
DOCUMENT-IDENTIFIER: US 6265212 B1

TITLE: Packaging systems for human recombinant adenovirus to be used in gene therapy

DATE-ISSUED: July 24, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fallaux; Frits J.	Leiderdorp	N/A	N/A	NLX
Hoeben; Robert C.	Leiden	N/A	N/A	NLX
Bout; Abraham	Moerkapelle	N/A	N/A	NLX
Valerio; Domenico	Leiden	N/A	N/A	NLX
van der Eb; Alex J.	Oegstgeest	N/A	N/A	NLX
Schouten; Govert	Leiden	N/A	N/A	NLX

US-CL-CURRENT: 435/320.1; 424/93.21, 435/235.1, 435/325, 435/69.1, 536/23.1

Full | Title | Citation | Front | Review | Classification | Date | Reference KWIC | Draw Desc | Image

☐ 3. Document ID: US 6117680 A

L7: Entry 3 of 12 File: USPT Sep 12, 2000

US-PAT-NO: 6117680
DOCUMENT-IDENTIFIER: US 6117680 A

TITLE: Compositions and methods for regulation of transcription

DATE-ISSUED: September 12, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Natesan; Sridaran	Chestnut Hill	MA	N/A	N/A
Gilman; Michael Z.	Newton	MA	N/A	N/A

US-CL-CURRENT: 435/455; 435/235.1, 435/320.1, 435/325, 435/456, 536/23.4

Full | Title | Citation | Front | Review | Classification | Date | Reference KWIC | Draw Desc | Image

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☑ 4. Document ID: US 6057155 A

L7: Entry 4 of 12 File: USPT May 2, 2000

US-PAT-NO: 6057155
DOCUMENT-IDENTIFIER: US 6057155 A

TITLE: Targeting adenovirus with use of constrained peptide motifs

DATE-ISSUED: May 2, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wickham; Thomas J.	Potomac	MD	N/A	N/A
Roelvink; Petrus W.	Olney	MD	N/A	N/A
Kovesdi; Imre	Rockville	MD	N/A	N/A

US-CL-CURRENT: 435/325; 435/320.1, 435/69.1, 536/23.4, 536/23.72

Full | Title | Citation | Front | Review | Classification | Date | Reference KWIC | Draw Desc | Image

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☐ 5. Document ID: US 6054312 A

L7: Entry 5 of 12 File: USPT Apr 25, 2000

US-PAT-NO: 6054312
DOCUMENT-IDENTIFIER: US 6054312 A

TITLE: Receptor-mediated gene delivery using bacteriophage vectors

DATE-ISSUED: April 25, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Larocca; David	Encinitas	CA	N/A	N/A
Baird; Andrew	San Diego	CA	N/A	N/A
Johnson; Wendy	Encinitas	CA	N/A	N/A

US-CL-CURRENT: 435/320.1; 530/350, 530/387.1, 536/23.5, 536/23.72

Full | Title | Citation | Front | Review | Classification | Date | Reference KWIC | Draw Desc | Image

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☐ 6. Document ID: US 6004798 A

L7: Entry 6 of 12 File: USPT Dec 21, 1999

US-PAT-NO: 6004798
DOCUMENT-IDENTIFIER: US 6004798 A

TITLE: Retroviral envelopes having modified hypervariable polyproline regions

DATE-ISSUED: December 21, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Anderson; W. French	San Marino	CA	N/A	N/A
Wu; Bonnie Weimin	Pasadena	CA	N/A	N/A

US-CL-CURRENT: 435/235.1; 435/320.1, 536/23.1

Full | Title | Citation | Front | Review | Classification | Date | Reference KWIC | Draw Desc | Image

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☐ 7. Document ID: US 5998205 A

L7: Entry 7 of 12 File: USPT Dec 7, 1999

US-PAT-NO: 5998205
DOCUMENT-IDENTIFIER: US 5998205 A

TITLE: Vectors for tissue-specific replication

DATE-ISSUED: December 7, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hallenbeck; Paul L.	Gaithersburg	MD	N/A	N/A
Chang; Yung-Nien	Cockeysville	MD	N/A	N/A
Chiang; Yawen L.	Potomac	MD	N/A	N/A

US-CL-CURRENT: 435/325; 424/93.21, 435/320.1, 435/455, 435/69.1, 514/44, 536/23.1

Full | Title | Citation | Front | Review | Classification | Date | Reference KWIC | Draw Desc | Image

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☑ 8. Document ID: US 5962311 A

L7: Entry 8 of 12 File: USPT Oct 5, 1999

US-PAT-NO: 5962311
DOCUMENT-IDENTIFIER: US 5962311 A

TITLE: Short-shafted adenoviral fiber and its use

DATE-ISSUED: October 5, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wickham; Thomas J.	Potomac	MD	N/A	N/A
Roelvink; Petrus W.	Olney	MD	N/A	N/A
Kovesdi; Imre	Rockville	MD	N/A	N/A

US-CL-CURRENT: 435/320.1; 435/235.1, 435/69.7

Full | Title | Citation | Front | Review | Classification | Date | Reference KWIC | Draw Desc | Image

☐ 9. Document ID: US 5912141 A

L7: Entry 9 of 12 File: USPT Jun 15, 1999

US-PAT-NO: 5912141
DOCUMENT-IDENTIFIER: US 5912141 A

TITLE: Nucleic acids encoding tumor virus susceptibility genes

DATE-ISSUED: June 15, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Brojatsch; Jurgen	Jamaica Pond	MA	N/A	N/A
Naughton; John	Somerville	MA	N/A	N/A
Young; John A. T.	Auburndale	MA	N/A	N/A

US-CL-CURRENT: 435/69.1; 435/252.3, 435/254.11, 435/320.1, 435/325, 435/69.7, 530/300, 530/350, 530/826, 536/23.1, 536/23.4, 536/23.5

Full | Title | Citation | Front | Review | Classification | Date | Reference KWIC | Draw Desc | Image

☒ 10. Document ID: US 5846782 A

L7: Entry 10 of 12 File: USPT Dec 8, 1998

US-PAT-NO: 5846782
DOCUMENT-IDENTIFIER: US 5846782 A

TITLE: Targeting adenovirus with use of constrained peptide motifs

DATE-ISSUED: December 8, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wickham; Thomas J.	Potomac	MD	N/A	N/A
Roelvink; Petrus W.	Olney	MD	N/A	N/A
Kovesdi; Imre	Rockville	MD	N/A	N/A

US-CL-CURRENT: 435/69.7; 530/350

Full | Title | Citation | Front | Review | Classification | Date | Reference KWIC | Draw Desc | Image

☐ 11. Document ID: US 5712136 A

L7: Entry 11 of 12 File: USPT Jan 27, 1998

US-PAT-NO: 5712136
DOCUMENT-IDENTIFIER: US 5712136 A

• TITLE: Adenoviral-mediated cell targeting commanded by the adenovirus penton base protein

DATE-ISSUED: January 27, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wickham; Thomas J.	Potomac	MD	N/A	N/A
Kovesdi; Imre	Rockville	MD	N/A	N/A
Roelvink; Petrus W.	Gaithersburg	MD	N/A	N/A
Brough; Douglas E.	Otney	MD	N/A	N/A
McVey; Duncan L.	Derwood	MD	N/A	N/A
Bruder; Joseph T.	Frederick	MD	N/A	N/A

US-CL-CURRENT: 435/456; 435/235.1, 435/320.1, 530/350

Full | Title | Citation | Front | Review | Classification | Date | Reference KWIC | Draw Desc | Image

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☐ 12. Document ID: US 5681746 A

L7: Entry 12 of 12 File: USPT Oct 28, 1997

US-PAT-NO: 5681746
DOCUMENT-IDENTIFIER: US 5681746 A

TITLE: Retroviral delivery of full length factor VIII

DATE-ISSUED: October 28, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bodner; Mordechai	San Diego	CA	N/A	N/A
De Polo; Nicholas J.	Solana Beach	CA	N/A	N/A
Chang; Stephen	Poway	CA	N/A	N/A
Hsu; David Chi-Tang	San Diego	CA	N/A	N/A
Respess; James G.	San Diego	CA	N/A	N/A

US-CL-CURRENT: 435/350; 435/320.1, 435/366, 435/371, 536/23.5

Full | Title | Citation | Front | Review | Classification | Date | Reference KWIC | Draw Desc | Image

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Generate Collection

Terms	Documents
capsid and l4	12

Display 20 Documents, starting with Document: 12

Display Format: Change Format

WEST

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Search Results - Record(s) 1 through 16 of 16 returned.

☐ 1. Document ID: US 6287857 B1

L8: Entry 1 of 16 File: USPT Sep 11, 2001

US-PAT-NO: 6287857
DOCUMENT-IDENTIFIER: US 6287857 B1

TITLE: Nucleic acid delivery vehicles

DATE-ISSUED: September 11, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
O'Riordan; Catherine R.	Boston	MA	N/A	N/A
Wadsworth; Samuel C.	Shrewsbury	MA	N/A	N/A

US-CL-CURRENT: 435/320.1; 536/23.1, 536/24.2

Full | Title | Citation | Front | Review | Classification | Date | Reference KWIC | Draw Desc | Image

☐ 2. Document ID: US 6265212 B1

L8: Entry 2 of 16 File: USPT Jul 24, 2001

US-PAT-NO: 6265212
DOCUMENT-IDENTIFIER: US 6265212 B1

TITLE: Packaging systems for human recombinant adenovirus to be used in gene therapy

DATE-ISSUED: July 24, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fallaux; Frits J.	Leiderdorp	N/A	N/A	NLX
Hoeben; Robert C.	Leiden	N/A	N/A	NLX
Bout; Abraham	Moerkapelle	N/A	N/A	NLX
Valerio; Domenico	Leiden	N/A	N/A	NLX
van der Eb; Alex J.	Oegstgeest	N/A	N/A	NLX
Schouten; Govert	Leiden	N/A	N/A	NLX

US-CL-CURRENT: 435/320.1; 424/93.21, 435/235.1, 435/325, 435/69.1, 536/23.1

Full | Title | Citation | Front | Review | Classification | Date | Reference KWIC | Draw Desc | Image

☐ 3. Document ID: US 6228844 B1

L8: Entry 3 of 16 File: USPT May 8, 2001

US-PAT-NO: 6228844
DOCUMENT-IDENTIFIER: US 6228844 B1

TITLE: Stimulating vascular growth by administration of DNA sequences encoding VEGF

DATE-ISSUED: May 8, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wolff; Jon A.	Madison	WI	N/A	N/A
Duke; David J.	Salem	OR	N/A	N/A
Felgner; Philip L.	Rancho Santa Fe	CA	N/A	N/A

US-CL-CURRENT: 514/44; 435/455

Full | Title | Citation | Front | Review | Classification | Date | Reference

KWIC | Draw Desc | Image

☐ 4. Document ID: US 6117680 A

L8: Entry 4 of 16 File: USPT Sep 12, 2000

US-PAT-NO: 6117680
DOCUMENT-IDENTIFIER: US 6117680 A

TITLE: Compositions and methods for regulation of transcription

DATE-ISSUED: September 12, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Natesan; Sridaran	Chestnut Hill	MA	N/A	N/A
Gilman; Michael Z.	Newton	MA	N/A	N/A

US-CL-CURRENT: 435/455; 435/235.1, 435/320.1, 435/325, 435/456, 536/23.4

Full | Title | Citation | Front | Review | Classification | Date | Reference

KWIC | Draw Desc | Image

☐ 5. Document ID: US 6080575 A

L8: Entry 5 of 16 File: USPT Jun 27, 2000

US-PAT-NO: 6080575
DOCUMENT-IDENTIFIER: US 6080575 A

TITLE: Nucleic acid construct for expressing active substances which can be activated by proteases, and preparation and use

DATE-ISSUED: June 27, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Heidtmann; Hans Heinrich	Marburg	N/A	N/A	DEX
Mueller; Rolf	Marburg	N/A	N/A	DEX
Sedlacek; Hans-Harald	Marburg	N/A	N/A	DEX

US-CL-CURRENT: 435/320.1; 435/456, 435/464, 536/23.1

Full | Title | Citation | Front | Review | Classification | Date | Reference

KWIC | Draw Desc | Image

☐ 6. Document ID: US 6057155 A

L8: Entry 6 of 16 File: USPT May 2, 2000

US-PAT-NO: 6057155
DOCUMENT-IDENTIFIER: US 6057155 A

TITLE: Targeting adenovirus with use of constrained peptide motifs

DATE-ISSUED: May 2, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wickham; Thomas J.	Potomac	MD	N/A	N/A
Roelvink; Petrus W.	Olney	MD	N/A	N/A
Kovesdi; Imre	Rockville	MD	N/A	N/A

US-CL-CURRENT: 435/325; 435/320.1, 435/69.1, 536/23.4, 536/23.72

Full | Title | Citation | Front | Review | Classification | Date | Reference KWIC | Draw Desc | Image

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☐ 7. Document ID: US 6054312 A

L8: Entry 7 of 16 File: USPT Apr 25, 2000

US-PAT-NO: 6054312
DOCUMENT-IDENTIFIER: US 6054312 A

TITLE: Receptor-mediated gene delivery using bacteriophage vectors

DATE-ISSUED: April 25, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Larocca; David	Encinitas	CA	N/A	N/A
Baird; Andrew	San Diego	CA	N/A	N/A
Johnson; Wendy	Encinitas	CA	N/A	N/A

US-CL-CURRENT: 435/320.1; 530/350, 530/387.1, 536/23.5, 536/23.72

Full | Title | Citation | Front | Review | Classification | Date | Reference KWIC | Draw Desc | Image

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☐ 8. Document ID: US 6004798 A

L8: Entry 8 of 16 File: USPT Dec 21, 1999

US-PAT-NO: 6004798
DOCUMENT-IDENTIFIER: US 6004798 A

TITLE: Retroviral envelopes having modified hypervariable polyproline regions

DATE-ISSUED: December 21, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Anderson; W. French	San Marino	CA	N/A	N/A
Wu; Bonnie Weimin	Pasadena	CA	N/A	N/A

US-CL-CURRENT: 435/235.1; 435/320.1, 536/23.1

Full | Title | Citation | Front | Review | Classification | Date | Reference KWIC | Draw Desc | Image

☐ 9. Document ID: US 5998205 A

L8: Entry 9 of 16 File: USPT Dec 7, 1999

US-PAT-NO: 5998205
DOCUMENT-IDENTIFIER: US 5998205 A

TITLE: Vectors for tissue-specific replication

DATE-ISSUED: December 7, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hallenbeck; Paul L.	Gaithersburg	MD	N/A	N/A
Chang; Yung-Nien	Cockeysville	MD	N/A	N/A
Chiang; Yawen L.	Potomac	MD	N/A	N/A

US-CL-CURRENT: 435/325; 424/93.21, 435/320.1, 435/455, 435/69.1, 514/44, 536/23.1

Full | Title | Citation | Front | Review | Classification | Date | Reference KWIC | Draw Desc | Image

☑ 10. Document ID: US 5962311 A

L8: Entry 10 of 16 File: USPT Oct 5, 1999

US-PAT-NO: 5962311
DOCUMENT-IDENTIFIER: US 5962311 A

TITLE: Short-shafted adenoviral fiber and its use

DATE-ISSUED: October 5, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wickham; Thomas J.	Potomac	MD	N/A	N/A
Roelvink; Petrus W.	Olney	MD	N/A	N/A
Kovesdi; Imre	Rockville	MD	N/A	N/A

US-CL-CURRENT: 435/320.1; 435/235.1, 435/69.7

Full | Title | Citation | Front | Review | Classification | Date | Reference KWIC | Draw Desc | Image

☑ 11. Document ID: US 5916803 A

L8: Entry 11 of 16 File: USPT Jun 29, 1999

US-PAT-NO: 5916803
DOCUMENT-IDENTIFIER: US 5916803 A

TITLE: Target cell-specific non-viral vectors for inserting genes into cells, pharmaceutical compositions comprising such vectors and their use

DATE-ISSUED: June 29, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sedlacek; Hans-Harald	Marburg	N/A	N/A	DEX
Klenk; Hans-Dieter	Linden	N/A	N/A	DEX
Kissel; Thomas	Marburg	N/A	N/A	DEX
Muller; Rolf	Marburg	N/A	N/A	DEX

US-CL-CURRENT: 435/320.1; 435/325, 435/334, 435/371, 536/23.1

Full | Title | Citation | Front | Review | Classification | Date | Reference | KWIC | Draw Desc | Image

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☐ 12. Document ID: US 5912141 A

L8: Entry 12 of 16 File: USPT Jun 15, 1999

US-PAT-NO: 5912141
DOCUMENT-IDENTIFIER: US 5912141 A

TITLE: Nucleic acids encoding tumor virus susceptibility genes

DATE-ISSUED: June 15, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Brojatsch; Jurgen	Jamaica Pond	MA	N/A	N/A
Naughton; John	Somerville	MA	N/A	N/A
Young; John A. T.	Auburndale	MA	N/A	N/A

US-CL-CURRENT: 435/69.1; 435/252.3, 435/254.11, 435/320.1, 435/325, 435/69.7, 530/300, 530/350, 530/826, 536/23.1, 536/23.4, 536/23.5

Full | Title | Citation | Front | Review | Classification | Date | Reference | KWIC | Draw Desc | Image

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☐ 13. Document ID: US 5846782 A

L8: Entry 13 of 16 File: USPT Dec 8, 1998

US-PAT-NO: 5846782
DOCUMENT-IDENTIFIER: US 5846782 A

TITLE: Targeting adenovirus with use of constrained peptide motifs

DATE-ISSUED: December 8, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wickham; Thomas J.	Potomac	MD	N/A	N/A
Roelvink; Petrus W.	Olney	MD	N/A	N/A
Kovesdi; Imre	Rockville	MD	N/A	N/A

US-CL-CURRENT: 435/69.7; 530/350

Full | Title | Citation | Front | Review | Classification | Date | Reference | KWIC | Draw Desc | Image

☐ 14. Document ID: US 5712136 A

L8: Entry 14 of 16 File: USPT Jan 27, 1998

US-PAT-NO: 5712136
DOCUMENT-IDENTIFIER: US 5712136 A

TITLE: Adenoviral-mediated cell targeting commanded by the adenovirus penton base protein

DATE-ISSUED: January 27, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wickham; Thomas J.	Potomac	MD	N/A	N/A
Kovesdi; Imre	Rockville	MD	N/A	N/A
Roelvink; Petrus W.	Gaithersburg	MD	N/A	N/A
Brough; Douglas E.	Otney	MD	N/A	N/A
McVey; Duncan L.	Derwood	MD	N/A	N/A
Bruder; Joseph T.	Frederick	MD	N/A	N/A

US-CL-CURRENT: 435/456; 435/235.1, 435/320.1, 530/350

Full | Title | Citation | Front | Review | Classification | Date | Reference | KWIC | Draw Desc | Image

☐ 15. Document ID: US 5700690 A

L8: Entry 15 of 16 File: USPT Dec 23, 1997

US-PAT-NO: 5700690
DOCUMENT-IDENTIFIER: US 5700690 A

TITLE: Compositions and methods for inhibiting fibrogenesis

DATE-ISSUED: December 23, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Neilson; Eric G.	Rosemont	PA	N/A	N/A
Danoff; Theodore	Phila.	PA	N/A	N/A
Okada; Hirokazu	Bryn Mawr	PA	N/A	N/A
Strutz; Frank	Gottingen	N/A	N/A	DEX

US-CL-CURRENT: 435/320.1; 424/93.21, 435/325, 435/69.1, 435/91.41, 514/44, 536/23.5

Full | Title | Citation | Front | Review | Classification | Date | Reference | KWIC | Draw Desc | Image

☐ 16. Document ID: US 5681746 A

L8: Entry 16 of 16 File: USPT Oct 28, 1997

DOCUMENT-IDENTIFIER: US 5681746 A

TITLE: Retroviral delivery of full length factor VIII

DATE-ISSUED: October 28, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bodner; Mordechai	San Diego	CA	N/A	N/A
De Polo; Nicholas J.	Solana Beach	CA	N/A	N/A
Chang; Stephen	Poway	CA	N/A	N/A
Hsu; David Chi-Tang	San Diego	CA	N/A	N/A
Respess; James G.	San Diego	CA	N/A	N/A

US-CL-CURRENT: 435/350; 435/320.1, 435/366, 435/371, 536/23.5

Full | Title | Citation | Front | Review | Classification | Date | Reference | KWIC | Draw Desc | Image

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Terms	Documents
liver and l4	16

Display 20 Documents, starting with Document: 16

Display Format: Change Format

=> d his

(FILE 'HOME' ENTERED AT 13:42:54 ON 19 SEP 2001)

FILE 'MEDLINE, CAPLUS, BIOSIS, SCISEARCH' ENTERED AT 13:43:05 ON 19 SEP 2001

L1 4 S TROPISM(8A)(SMOOTH(W)MUSCLE(W)CELL OR SMC)
L2 37 S TROPISM(S)(SMOOTH(W)MUSCLE(W)CELL OR SMC)
L3 1480214 S VIRUS OR ADENOVIR?
L4 28 S L2 AND L3
L5 6 S LIVER AND L4
L6 4 S CAPSID AND L4
L7 3 DUP REM L6 (1 DUPLICATE REMOVED)
L8 4 DUP REM L5 (2 DUPLICATES REMOVED)

=> d bib ab 1-3 l7

L7 ANSWER 1 OF 3 MEDLINE DUPLICATE 1
AN 2001498384 IN-PROCESS
DN 21431998 PubMed ID: 11545607
TI Efficient and selective aav2-mediated gene transfer directed to human vascular endothelial cells.
AU Nicklin S A; Buening H; Dishart K L; de Alwis M; Girod A; Hacker U; Thrasher A J; Ali R R; Hallek M; Baker A H
CS Department of Medicine and Therapeutics, University of Glasgow, Glasgow, G11 6NT, UK.
SO MOLECULAR THERAPY, (2001 Sep) 4 (3) 174-81.
Journal code: DRT; 100890581. ISSN: 1525-0016.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS IN-PROCESS; NONINDEXED; Priority Journals
ED Entered STN: 20010910
Last Updated on STN: 20010910
AB Gene therapy vectors based on adeno-associated **virus**-2 (AAV2) offer considerable promise for human gene therapy. Applications for AAV vectors are limited to tissues efficiently transduced by the vector due to its natural **tropism**, which is predominantly skeletal muscle, neurons, and hepatocytes. **Tropism** modification to elevate efficiency and/or selectivity to individual cell types would enhance the scope of AAV for disease therapies. The vascular endothelium is implicitly important in cardiovascular diseases and cancer, but is relatively poorly transduced by AAV vectors. We therefore genetically incorporated the peptide SIGYPLP, which targets endothelial cells (EC), into position I-587 of AAV **capsids**. SIGYPLP-modified AAV (AAVsig) showed enhanced transduction of human EC compared with AAV with a wild-type **capsid** (AAVwt), a phenotype independent of heparan sulphate proteoglycan (HSPG) binding. In contrast, AAVsig did not enhance transduction of primary human vascular **smooth muscle cells** or human hepatocytes, principal targets for AAV vectors in local or systemic gene delivery applications, respectively. Furthermore, infection of EC in the presence of bafilomycin A(2) indicated that intracellular trafficking of AAV particles was altered by targeting AAV by means of SIGYPLP. AAV vectors with enhanced **tropism** for EC will be useful for diverse

gene therapeutics targeted at the vasculature.

L7 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2001 ACS
AN 2000:368622 CAPLUS
DN 133:27392
TI Chimeric **adenoviral** vectors specific for gene transfer to smooth muscle cells, and/or endothelial cells
IN Havenga, Menzo Jans Emco; Bout, Abraham; Vogels, Ronald
PA Introgene B.V., Neth.
SO PCT Int. Appl., 91 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000031285	A1	20000602	WO 1999-NL717	19991122
	W: AM, AZ, BA, BB, BG, BR, BY, CA, CN, CR, CU, CZ, DM, GD, GE, GH, GM, HR, HU, ID, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, MA, MD, MG, MN, MW, PL, RU, SD, SG, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	NO 9905697	A	20000522	NO 1999-5697	19991119
	EP 1020529	A2	20000719	EP 1999-203878	19991119
	EP 1020529	A3	20000816		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	AU 9959600	A1	20000525	AU 1999-59600	19991122
	JP 2000157289	A2	20000613	JP 1999-332033	19991122
PRAI	EP 1998-203921	A	19981120		

AB The invention provides chimeric **adenoviral** vectors with tissue **tropism** of **smooth muscle cells**, and/or endothelial cells (but not of liver cells) used for gene transfer in gene therapy. The chimeric **adenoviral** vectors is constructed by switching the functional part (fiber protein subunit) of **adenoviral capsid** protein in **adenovirus** type 5 vector to that of a subgroup B **adenovirus**, preferably **adenovirus** 16 (Ad16). The biodistribution of these chimeric vector after i.v. tail vein injection of rats and and their display differences in the endothelial and smooth muscle cell transduction are detd. The infection efficiency of Ad5 vector to smooth muscle cells, and/or endothelial cells can be increased significantly by changing the fiber subunit (esp. shaft and knob parts) of **capsid** protein to that of Ad16. In this way, the host immune response to recombinant **viruses** derived from the chimeric **adenovirus** vectors are greatly reduced. The contribution of cellular receptors such as CAR (Coxsackievirus and **adenovirus** receptor) or integrin to viral infection is also studied. Methods of prepg. various chimeric **adenovirus** vectors and using them to treat diseases, preferably cardiovascular diseases are also provided.

RE.CNT 8
RE
(1) Armentano, D; WO 9822609 A 1998 CAPLUS
(2) Fallaux, F; HUM GENE THER 1998, V9, P1909 CAPLUS
(3) Gall, J; J VIROL 1996, V70(4), P2116 CAPLUS
(4) Genvec Inc; WO 9720051 A 1997 CAPLUS
(5) Karayan, L; WO 9833929 A 1998 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 3 OF 3 MEDLINE
AN 1998001338 MEDLINE
DN 98001338 PubMed ID: 9343173
TI Increased in vitro and in vivo gene transfer by **adenovirus** vectors containing chimeric fiber proteins.
AU Wickham T J; Tzeng E; Shears L L 2nd; Roelvink P W; Li Y; Lee G M; Brough D E; Lizonova A; Kovesdi I
CS GenVec, Inc., Rockville, Maryland 20852, USA.
SO JOURNAL OF VIROLOGY, (1997 Nov) 71 (11) 8221-9.
Journal code: KCV; 0113724. ISSN: 0022-538X.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199711
ED Entered STN: 19971224
Last Updated on STN: 19971224
Entered Medline: 19971113
AB Alteration of the natural **tropism** of **adenovirus** (Ad) will permit gene transfer into specific cell types and thereby greatly broaden the scope of target diseases that can be treated by using Ad. We have constructed two Ad vectors which contain modifications to the Ad fiber coat protein that redirect **virus** binding to either alpha(v) integrin [AdZ.F(RGD)] or heparan sulfate [AdZ.F(pK7)] cellular receptors. These vectors were constructed by a novel method involving E4 rescue of an E4-deficient Ad with a transfer vector containing both the E4 region and the modified fiber gene. AdZ.F(RGD) increased gene delivery to endothelial and **smooth muscle cells** expressing alpha(v) integrins. Likewise, AdZ.F(pK7) increased transduction 5- to 500-fold in multiple cell types lacking high levels of Ad fiber receptor, including macrophage, endothelial, smooth muscle, fibroblast, and T cells. In addition, AdZ.F(pK7) significantly increased gene transfer in vivo to vascular **smooth muscle cells** of the porcine iliac artery following balloon angioplasty. These vectors may therefore be useful in gene therapy for vascular restenosis or for targeting endothelial cells in tumors. Although binding to the fiber receptor still occurs with these vectors, they demonstrate the feasibility of tissue-specific receptor targeting in cells which express low levels of Ad fiber receptor.

=> d bib ab 1-4 l8

L8 ANSWER 1 OF 4 SCISEARCH COPYRIGHT 2001 ISI (R)
AN 2001:713850 SCISEARCH
GA The Genuine Article (R) Number: 468DX
TI Efficient and selective AAV2-mediated gene transfer directed to human vascular endothelial cells
AU Nicklin S A; Buening H; Dishart K L; de Alwis M; Girod A; Hacker U; Thrasher A J; Ali R R; Hallek M; Baker A H (Reprint)
CS Univ Glasgow, Dept Med & Therapeut, Glasgow G11 6NT, Lanark, Scotland (Reprint); Univ Munich, Genzentrum, Mol Biol Lab, D-81377 Munich, Germany;

Univ Coll London, Inst Child Hlth, London, England
CYA Scotland; Germany; England
SO MOLECULAR THERAPY, (SEP 2001) Vol. 4, No. 3, pp. 174-181.
Publisher: ACADEMIC PRESS INC, 525 B ST, STE 1900, SAN DIEGO, CA 92101-4495 USA.
ISSN: 1525-0016.
DT Article; Journal
LA English
REC Reference Count: 50
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB Gene therapy vectors based on adeno-associated **virus**-2 (AAV2) offer considerable promise for human gene therapy. Applications for AAV vectors are limited to tissues efficiently transduced by the vector due to its natural **tropism**, which is predominantly skeletal muscle, neurons, and hepatocytes. **Tropism** modification to elevate efficiency and/or selectivity to individual cell types would enhance the scope of AAV for disease therapies. The vascular endothelium is implicitly important in cardiovascular diseases and cancer, but is relatively poorly transduced by AAV vectors. We therefore genetically incorporated the peptide SIGYPLP, which targets endothelial cells (EC), into position I-587 of AAV capsids. SIGYPLP-modified AAV (AAVsig) showed enhanced transduction of human EC compared with AAV with a wild-type capsid (AAVwt), a phenotype independent of heparan sulphate proteoglycan (HSPG) binding. In contrast, AAVsig did not enhance transduction of primary human vascular **smooth muscle cells** or human hepatocytes, principal targets for AAV vectors in local or systemic gene delivery applications, respectively. Furthermore, infection of EC in the presence of bafilomycin A(2) indicated that intracellular trafficking of AAV particles was altered by targeting AAV by means of SIGYPLP. AAV vectors with enhanced **tropism** for EC will be useful for diverse gene therapeutics targeted at the vasculature.

L8 ANSWER 2 OF 4 MEDLINE DUPLICATE 1
AN 2001414373 MEDLINE
DN 21356643 PubMed ID: 11463761
TI Analysis of cell-specific promoters for viral gene therapy targeted at the vascular endothelium.
AU Nicklin S A; Reynolds P N; Brosnan M J; White S J; Curiel D T; Dominiczak A F; Baker A H
CS Department of Medicine and Therapeutics, University of Glasgow, Western Infirmary, Glasgow, United Kingdom.
SO HYPERTENSION, (2001 Jul) 38 (1) 65-70.
Journal code: GK7; 7906255. ISSN: 1524-4563.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200108
ED Entered STN: 20010813
Last Updated on STN: 20010813
Entered Medline: 20010809
AB The use of viral vectors for vascular gene therapy targeted at the endothelium is limited by the promiscuous **tropism** of vectors and

nonspecificity of viral promoters, resulting in high-level transgene expression in multiple tissues. To evaluate suitable endothelial cell (EC)-specific promoters for vascular gene therapy, we directly compared the ability of the fms-like tyrosine kinase-1 (FLT-1), intercellular adhesion molecule-2 (ICAM-2), and von Willebrand factor (vWF) promoters to drive EC-restricted transcription after cloning into **adenoviral** vectors upstream of lacZ. Vastly different expression profiles were observed. Whereas both FLT-1 and ICAM-2 promoters generated transgene expression levels similar to cytomegalovirus in ECs in vitro, vWF expression levels were extremely low. Analysis of non-EC types revealed that ICAM-2 but not FLT-1 evoked leaky transgene expression, thus identifying FLT-1 as the most selective promoter. With an ex vivo human gene therapy model, the FLT-1 promoter demonstrated EC-specific transgene expression in intact human vein but no detectable expression from infected exposed **smooth muscle cells** in EC-denuded vein. Furthermore, when **adenoviruses** were systemically administered to mice, the FLT-1 promoter demonstrated extremely low-level gene expression in the **liver**, the major target organ for **adenoviral** transduction in vivo. This study highlights the potential of using the FLT-1 promoter for local and systemic human gene therapy in hypertension and its complications.

L8 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2001 ACS
AN 2000:368622 CAPLUS
DN 133:27392
TI Chimeric **adenoviral** vectors specific for gene transfer to smooth muscle cells, and/or endothelial cells
IN Havenga, Menzo Jans Emco; Bout, Abraham; Vogels, Ronald
PA Introgene B.V., Neth.
SO PCT Int. Appl., 91 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000031285	A1	20000602	WO 1999-NL717	19991122
	W: AM, AZ, BA, BB, BG, BR, BY, CA, CN, CR, CU, CZ, DM, GD, GE, GH, GM, HR, HU, ID, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, MA, MD, MG, MN, MW, PL, RU, SD, SG, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	NO 9905697	A	20000522	NO 1999-5697	19991119
	EP 1020529	A2	20000719	EP 1999-203878	19991119
	EP 1020529	A3	20000816		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	AU 9959600	A1	20000525	AU 1999-59600	19991122
	JP 2000157289	A2	20000613	JP 1999-332033	19991122
PRAI	EP 1998-203921	A	19981120		

AB The invention provides chimeric **adenoviral** vectors with tissue **tropism** of **smooth muscle cells**, and/or endothelial cells (but not of **liver** cells) used for gene transfer in gene therapy. The chimeric **adenoviral** vectors is constructed by switching the functional part (fiber protein subunit) of **adenoviral** capsid protein in **adenovirus** type 5 vector to

that of a subgroup B **adenovirus**, preferably **adenovirus** 16 (Ad16). The biodistribution of these chimeric vector after i.v. tail vein injection of rats and and their display differences in the endothelial and smooth muscle cell transduction are detd. The infection efficiency of Ad5 vector to smooth muscle cells, and/or endothelial cells can be increased significantly by changing the fiber subunit (esp. shaft and knob parts) of capsid protein to that of Ad16. In this way, the host immune response to recombinant **viruses** derived from the chimeric **adenovirus** vectors are greatly reduced. The contribution of cellular receptors such as CAR (Coxsackievirus and **adenovirus** receptor) or integrin to viral infection is also studied. Methods of prepg. various chimeric **adenovirus** vectors and using them to treat diseases, preferably cardiovascular diseases are also provided.

RE.CNT 8
RE
(1) Armentano, D; WO 9822609 A 1998 CAPLUS
(2) Fallaux, F; HUM GENE THER 1998, V9, P1909 CAPLUS
(3) Gall, J; J VIROL 1996, V70(4), P2116 CAPLUS
(4) Genvec Inc; WO 9720051 A 1997 CAPLUS
(5) Karayan, L; WO 9833929 A 1998 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 4 OF 4 SCISEARCH COPYRIGHT 2001 ISI (R)
AN 97:346968 SCISEARCH
GA The Genuine Article (R) Number: WW709
TI Human cytomegalovirus cell tropism and pathogenesis
AU Sinzger C (Reprint); Jahn G
CS UNIV TUBINGEN, ABT MED VIROL, INST HYG, CALWER STR 716, D-72076 TUBINGEN, GERMANY (Reprint)
CYA GERMANY
SO INTERVIROLOGY, (SEP-DEC 1996) Vol. 39, No. 5-6, pp. 302-319.
Publisher: KARGER, ALLSCHWILERSTRASSE 10, CH-4009 BASEL, SWITZERLAND.
ISSN: 0300-5526.
DT General Review; Journal
FS LIFE
LA English
REC Reference Count: 230
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB The human cytomegalovirus (HCMV) can cause lifelong infection with episodes of endogenous reactivation. Intrauterine fetal infection and infection of immunocompromised patients are well known to result in significant morbidity. Studies on HCMV cell **tropism** in vivo revealed three characteristics: (1) ubiquitously distributed cell types such as epithelial cells, endothelial cells and fibroblasts are the major targets of HCMV infection; (2) leukocytes circulating in the peripheral blood are susceptible to the **virus**, and (3) specialized parenchymal cells such as **smooth muscle cells** in the gastrointestinal tract and hepatocytes can also be infected. Questions to be resolved are, how the **virus** spreads throughout the organism, how it can impair the function of infected organs, and how it evades the host's immune response to establish lifelong infection. This chapter is focused on the role of HCMV-infected target cells for the pathogenesis of HCMV-associated disease in the acutely infected immunocompromised host.

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     (FILE 'HOME' ENTERED AT 13:42:54 ON 19 SEP 2001)

     FILE 'MEDLINE, CAPLUS, BIOSIS, SCISEARCH' ENTERED AT 13:43:05 ON 19 SEP
     2001
L1             4 S TROPISM(8A)(SMOOTH(W)MUSCLE(W)CELL OR SMC)
L2            37 S TROPISM(S)(SMOOTH(W)MUSCLE(W)CELL OR SMC)
L3       1480214 S VIRUS OR ADENOVIR?
L4            28 S L2 AND L3
L5             6 S LIVER AND L4
L6             4 S CAPSID AND L4
L7             3 DUP REM L6 (1 DUPLICATE REMOVED)
L8             4 DUP REM L5 (2 DUPLICATES REMOVED)
L9            61 S ADENOVIR?(5A)SUBGROUP(W)B
L10            0 S L2 AND L9
L11            0 S ADENOVIR?(5A)(3 7 16 21 51 11 14 34 35)
L12         6860 S ADENOVIR?(5A)(3 OR 7 OR 16 OR 21 OR 51 OR 11 OR 14 OR 34 OR
3
L13            2 S L2 AND L12
L14            2 DUP REM L13 (0 DUPLICATES REMOVED)

=> d bib ab 1-2 l14

L14  ANSWER 1 OF 2  CAPLUS  COPYRIGHT 2001 ACS
AN   2000:368622  CAPLUS
DN   133:27392
TI   Chimeric adenoviral vectors specific for gene transfer to smooth muscle
     cells, and/or endothelial cells
IN   Havenga, Menzo Jans Emco; Bout, Abraham; Vogels, Ronald
PA   Introgene B.V., Neth.
SO   PCT Int. Appl., 91 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.         KIND  DATE          APPLICATION NO.  DATE
     ---------------    ----  --------      ---------------  --------
PI   WO 2000031285      A1    20000602      WO 1999-NL717    19991122
         W:  AM, AZ, BA, BB, BG, BR, BY, CA, CN, CR, CU, CZ, DM, GD, GE, GH,
             GM, HR, HU, ID, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, MA,
             MD, MG, MN, MW, PL, RU, SD, SG, SK, SL, TJ, TM, TR, TT, TZ, UA,
             UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, BF, BJ, CF, CG, CI,
             CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
     NO 9905697          A     20000522      NO 1999-5697     19991119
     EP 1020529          A2    20000719      EP 1999-203878   19991119
     EP 1020529          A3    20000816
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO
     AU 9959600          A1    20000525      AU 1999-59600    19991122
     JP 2000157289       A2    20000613      JP 1999-332033   19991122
PRAI EP 1998-203921      A     19981120
AB   The invention provides chimeric adenoviral vectors with tissue
     tropism of smooth muscle cells,
     and/or endothelial cells (but not of liver cells) used for gene transfer
     in gene therapy.  The chimeric adenoviral vectors is constructed by
     switching the functional part (fiber protein subunit) of adenoviral
capsid
```

protein in adenovirus type 5 vector to that of a subgroup B **adenovirus**, preferably **adenovirus 16** (Ad16). The biodistribution of these chimeric vector after i.v. tail vein injection of rats and and their display differences in the endothelial and smooth muscle cell transduction are detd. The infection efficiency of Ad5 vector to smooth muscle cells, and/or endothelial cells can be increased significantly by changing the fiber subunit (esp. shaft and knob parts) of capsid protein to that of Ad16. In this way, the host immune response to recombinant viruses derived from the chimeric adenovirus vectors are greatly reduced. The contribution of cellular receptors such as CAR (Coxsackievirus and adenovirus receptor) or integrin to viral infection is also studied. Methods of prepg. various chimeric adenovirus vectors and using them to treat diseases, preferably cardiovascular diseases are also provided.

RE.CNT 8
RE
(1) Armentano, D; WO 9822609 A 1998 CAPLUS
(2) Fallaux, F; HUM GENE THER 1998, V9, P1909 CAPLUS
(3) Gall, J; J VIROL 1996, V70(4), P2116 CAPLUS
(4) Genvec Inc; WO 9720051 A 1997 CAPLUS
(5) Karayan, L; WO 9833929 A 1998 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 2 OF 2 MEDLINE
AN 2000132364 MEDLINE
DN 20132364 PubMed ID: 10668880
TI Optimizing cardiovascular gene therapy: increased vascular gene transfer with modified adenoviral vectors.
AU Kibbe M R; Murdock A; Wickham T; Lizonova A; Kovesdi I; Nie S; Shears L; Billiar T R; Tzeng E
CS Department of Surgery, University of Pittsburgh, PA 15261, USA.. kibbemr@msx.upmc.edu
NC R29-HL-57854 (NHLBI)
SO ARCHIVES OF SURGERY, (2000 Feb) 135 (2) 191-7. Journal code: 8IA; 9716528. ISSN: 0004-0010.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 200003
ED Entered STN: 20000320
Last Updated on STN: 20000320
Entered Medline: 20000309
AB BACKGROUND: Adenovirus is widely used as a vector for gene transfer to the vasculature. However, the efficiency of these vectors can be limited by ineffective viral-target cell interactions. Viral attachment, which largely determines adenoviral **tropism**, is mediated through binding of the adenoviral fiber coat protein to the Coxsackievirus and adenovirus receptor, while internalization follows binding of the adenoviral RGD motif to alpha(v)-integrin receptors. Modifications of the fiber coat protein sequence have been successful for targeting the adenovirus to more prevalent receptors in the vasculature, including heparan sulfate-containing receptors and alpha(v)-integrin receptors. HYPOTHESIS: Modified adenoviral vectors targeted to receptors more

prevalent in the vasculature result in an increased transfer efficiency of the virus in vitro and in vivo even in the presence of clinically relevant doses of heparin. DESIGN: We tested 2 modified E1- and E3-deleted Ad5 type adenoviral vectors containing the beta-galactosidase gene. AdZ.F(pK7) contains multiple positively charged lysines in the fiber coat protein that target the adenovirus to heparan sulfate receptors, while AdZ.F(RGD) contains an RGD integrin-binding sequence in the fiber coat protein that allows binding to alpha(v)-integrin receptors. The gene transfer efficiency of these modified viruses was compared in rat aortic **smooth muscle cells** in vitro and in an in vivo porcine model of balloon-induced arterial injury. Because of the use of heparin during most vascular surgical procedures and the concern that heparin might interfere with the binding of AdZ.F(pK7) to heparan sulfate receptors, the effect of heparin on the in vitro and in vivo transfer efficiency of these 2 modified adenoviruses was evaluated. RESULTS: In vitro infection of rat aortic **smooth muscle cells** with AdZ.F(pK7) and AdZ.F(RGD) resulted in significantly higher levels of beta-galactosidase expression compared with the unmodified **adenovirus** (mean +/- SEM, 1766.**3** +/- 89.1 and 44.8 +/- 3.4 vs 10.1 +/- 0.7 mU per milligram of protein; P<.001). Following heparin administration, the gene transfer efficiency achieved with AdZ.F(pK7) diminished slightly in a concentration-dependent manner. However, the transfer efficiency was still greater than with the unmodified virus (mean +/- SEM, 1342.3 +/- 101.8 vs 4.8 +/- 0.4 mU per milligram of protein; P<.001). In vivo, following injury to the pig iliac artery with a 4F Fogarty balloon catheter, we found that AdZ.F(pK7) transduced the artery approximately 35-fold more efficiently than AdZ.F and 3-fold more efficiently than AdZ.F(RGD) following the administration of intravenous heparin, 100 U/kg body weight, and heparinized saline irrigation. CONCLUSIONS: Modifications of the adenovirus that lead to receptor targeting resulted in significantly improved gene transfer efficiencies. These improvements in transfer efficiencies observed with the modified vectors decreased slightly in the presence of heparin. However, AdZ.F(pK7) was still superior to AdZ.F(RGD) and AdZ.F despite heparin administration. These data demonstrate that modifications of adenoviral vectors that enhance binding to heparan sulfate receptors significantly improve gene transfer efficiency even in the presence of heparin and suggest an approach to optimize gene transfer into blood vessels.

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